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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,907	10/29/2003	Tetsuhito Tsukagoshi	Q78094	4502

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EXAMINER

FISCHER, JUSTIN R

ART UNIT PAPER NUMBER

1733

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,907

Applicant(s)

TSUKAGOSHI ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-21, 23-28 and 30-34 is/are pending in the application.
- 4a) Of the above claim(s) 23-28 and 30-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Continental (FR 1596358, newly cited) and further in view of Maeda (JP 64-30808, of record), Miura (JP 5-96905, of record), and Mechanics of Pneumatic Tires (Pages 212-213 and 881-884). As best depicted in Figures 2 and 3, Continental is directed to a radial, pneumatic tire construction comprising at least one carcass ply 2 formed of steel cords and a bead portion reinforcing layer 9, wherein said carcass ply is turned around bead core 4 from an inside toward an outside and said reinforcing layer extends on the axially inside and outside of said bead core. The reference further teaches that a rubber layer 12 controlling strain is arranged at the end portion of said reinforcing layer. The reference, though, fails to suggest that the carcass is terminated along a peripheral face of the bead core. In any event, it is extremely well known to wrap the carcass turnup around the bead core, as opposed to allowing the end be arranged in the upper bead portion, in order to increase tire durability (eliminates the cords of the carcass from being exposed), as shown for example by Maeda (Abstract) and Miura (Abstract). It is particularly noted that the tire of Maeda is extremely similar to that of Continental in that the tire is formed of a single carcass ply and a bead portion reinforcing layer- in this

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instance, Maeda specifically recognizes the advantages of modifying a conventional carcass turnup (Figure 4 of Maeda and Figures of Continental) in accordance to the limitations of the claimed invention. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to wrap the carcass of Continental around the bead core such that it terminated along the peripheral face of the bead core.

Regarding the bead filler, the Figures of Continental fail to expressly depict the presence of a "bead filler" or distinct rubber layer radially outward of the bead core 4. However, a "bead filler" represents one of the fundamental components of modern day tire constructions, as shown for example by Mechanics of Pneumatic Tires (Pages 212-213). One of ordinary skill in the art at the time of the invention would have expected a bead filler to be present in the tire of Continental. In this instance, then, the rubber layer 12 would be arranged between a bead filler and a bead portion reinforcing layer.

With respect to claim 13, Continental states that it is preferred that the rubber layer has a hardness that is greater than the rubber of the surrounding tire. However, it is well recognized that a patent may be relied upon for all that it would have reasonably suggested to one of ordinary skill in the art, including non-preferred embodiments (MPEP 2123). More particularly, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. In this instance, one of ordinary skill in the art at the time of the invention would have been able to appropriately select the hardness of the rubber layer 12 depending on the specific tire being manufactured, there being no conclusive showing

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of unexpected results with a rubber layer having an intermediate hardness with respect to the filler and the sidewall. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the rubber layer with an intermediate hardness.

Regarding claims 13 and 14, *Mechanics of Pneumatic Tires* evidences the common tire structure in which the bead filler is significantly harder than the sidewall (Pages 881-884). One of ordinary skill in the art at the time of the invention would have expected the tire of Continental to demonstrate such a relationship as it is consistent with the common structure of tires.

As to claim 14, *Mechanics of Pneumatic Tires* provides several examples in which the bead filler has a hardness that is at least 1.4 times that of the sidewall. It is emphasized that the examples in *Mechanics of Pneumatic Tires* provide a general relationship between the respective tire components, such that tires having a greater ratio are not excluded. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed ratio.

With respect to claim 15, Figures 1 and 3 of Continental suggest that the rubber layers are formed with dimensions that satisfy the limitations of the claimed invention. While it is unclear if the drawings are "working drawings", it is clearly evident that the respective layers generally have the same thickness and thus satisfy the broad range of the claimed invention.

Regarding claims 16 and 17, Figure 3 of Continental clearly depicts the rubber layer as protruding slightly beyond the end of the bead portion reinforcing layer and well

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below the claimed maximum value of 30 millimeters. As to the inner end of the rubber layer, one of ordinary skill in the art at the time of the invention would have recognized that the positioning of said inner end is a function of the radial extent of the bead portion reinforcing layer. Thus, if the end of the bead portion reinforcing layer is slightly decreased, the inner end of the rubber layer would correspond to an upper part of the bead core. It is noted that Continental fails to place any criticality on the specific location of the end of the bead portion reinforcing layer, it being well recognized that such layers are commonly described as having a range of heights and are not limited to a single embodiment (e.g. Figure 3). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire of Continental such that the inner end of the rubber layer corresponds to an upper part of the bead core. It is additionally noted that in some of these instances, the inner end of the rubber layer would come into contact with the carcass turnup portion.

3. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Continental, Maeda, Miura, and Mechanics of Pneumatic tires as applied in the rejection of claim 12 above and further in view of Kabe (JP 01056210, newly cited). As depicted in Figures 3 and 4, the tire of Continental does not include a "recess zone" in a portion of the tire located inward from a position of maximum tire width. However, it is well known to provide such contours on the outer surface in order to provide enhanced tire durability, as shown for example by Kabe (Abstract). In particular, such a "recess zone" reduces the amount of shearing strain due to tire deformation (as a result of adjacent

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portions having large and small thickness). One of ordinary skill in the art at the time of the invention would have found it obvious to form the tire outer surface of Continental with a "recess zone" in order to obtain the aforementioned benefits. It is noted that Kabe specifically recognizes the end of a bead portion reinforcing layer as being a location where such a recess zone would eliminate strains (Figure 6). Lastly, it is emphasized that it is well known to form the tire outer surface with a concave profile, as opposed to a slightly curved profile, in which case a recess zone is formed.

With respect to claim 19, the "recess zone" of Continental would be located in a region axially outward of the end of the bead portion reinforcing layer, such that the rubber gauge outward of a height equal to 1.8 times the maximum bead width (as measured from the nominal diameter of the rim flange) would be substantially constant.

As to claim 20, the claim generally requires the recess zone be outward of "an alienation point". As noted above, the recess zone of Continental would be expected to present in a region axially outward of the end of the bead portion reinforcing layer such that it would be radially outward of "an alienation point" that is radially outward of the rim flange and outer surface of the bead.

Regarding claim 21, the "alienation point" can be one of several points that are inward of the "recess zone" (only required that it is inward of the recess zone and outward of the rim flange), such that the thickness at the "alienation point" would be expected to be extremely similar to the maximum bead thickness. Applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed relationship.

Response to Arguments

4. Applicant's arguments with respect to claims 12-21 have been considered but are moot in view of the new ground(s) of rejection. As amended, the claims require the bead portion reinforcing layer be positioned axially inward and axially outward of the associated bead core. The previous rejections have been withdrawn in view of this amendment. However, a new series of rejections in view of newly cited Continental are applicable as set forth above.

It is additionally noted that applicant did argue that a similar combination to that set forth above amounts to a total reworking of the carcass and one of ordinary skill in the art would have to speculate as to the effects on the existing reinforcement structure. However, Maeda and Miura specifically disclose the advantages of improved tire durability as a result of wrapping a carcass turnup portion as opposed to extending the carcass into the upper bead portion/lower sidewall- such a modification is not seen to constitute a "total reworking" of the carcass but rather a recognized technique in the prior art in order to obtain the above noted benefits. In particular, Maeda is specifically directed to a tire construction having a bead reinforcing layer that is axially inward and outward of the bead core and in such an instance, the reference suggests that it would have been within the purview of one of ordinary skill in the art at the time of the invention to appropriately include the claimed turnup construction in a tire having a bead portion reinforcing layer.

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Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

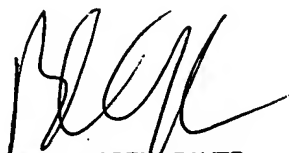
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin Fischer

July 13, 2005



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